205.   (New) Communication method according to claim 162, wherein the

communication device which is a source of information to be transmitted in connected

mode performs an operation of varying the size of data packets with a load on the path and

transmission rate of the packets on the path.

206   (New) Communication device according to claim 175, wherein the

communication device whic

h is a source of information to be transmitted in connected mode further comprises a

variation means adapted, for varying the size of data packets with a load on the path and

transmission rate of the packets on the path.

REMARKS

This application has been reviewed in light of the Office Action dated July

17, 2002. Claims 1-12, 14-16, 20-46, 48-59, 61, 69-101, 103, 107, 110-132, 135-151, 160-

187, 189, and 199-206 are presented for examination. Claims 13, 17-19, 47, 60, 62-68,

102, 104-106, 108, 109, 133, 134, 152-159, 188, and 190-198 have been canceled, without

prejudice or disclaimer of subject matter. Claims 1-12, 14-16, 20-46, 48-59, 61, 69-101,

103, 107, 110-132, 135-151, 160-187, 189, 199, and 200 have been amended to define

more clearly what Applicant regards as his invention. Claims 201-206 have been added to

provide Applicants with a more complete scope of protection. Claims 1, 31, 71, 87, 113,

132, 162, and 175 are in independent form. Favorable reconsideration is requested.

A substitute specification, which adds no new matter, is submitted herewith,

in response to the objection to the specification set out in paragraph 1 of the Office Action.

A Request for Approval of Drawing Changes is submitted herewith, in response to the

objections to the drawings set out in paragraph 3 of the Office Action. A Letter Transmitting Corrected Drawings is submitted to widen the margins of Figure, 2, 4, 5 and 6 as requested by the Chief Draftsperson.

Applicants note with appreciation the allowance of Claims 113-131, 134, 160-174, 199, and 200, and the indication that Claims 8-22, 26, 27, 29, 30, 33, 34, 38-50, 54, 55, 57, 58, 85, 86, 97, 137, 140, 149, 178, 183, 186, and 187 would be allowable if rewritten so as not to depend from a rejected claim, and with no change in scope. The latter claims have not been so rewritten because, for the reasons given below, their base claims are believed to be allowable.

The Office Action objected to the abstract because of a reference to Figure 12 that stands by itself. The abstract has been amended to overcome the noted objection. The amended abstract is made part of the substitute specification, submitted herewith. It is believed that the objection to the abstract has been remedied by the filing of the substitute specification, and its withdrawal is therefore respectfully requested.

The Office Action objected to the specification for failing to include headings in the specification. The specification has been carefully reviewed and amended, to overcome the noted objection. It is believed that the objection to the specification has been remedied by the filing of the substitute specification, and its withdrawal is therefore respectfully requested.

The Office Action objected to the drawings because Figures 2 and 10 lacked descriptive legends.

Applicant has carefully reviewed and amended Figures 2 and 10 to overcome the noted objection. It is believed that the objection to Figures 2 and 10 has been remedied, and its withdrawal is therefore respectfully requested. Formal issues relating to

the margins, identified in the PTO-948 form, also have been addressed in the Letter Transmitting Corrected Drawings.

Claims 1-7, 23-25, 28, 31, 32, 35-37, 51-53, 56, 59, 60, 69-84, 87-96, 98-102, 111, 112, 132, 133, 135, 136, 138, 139, 141-148, 150, 151, 175-177, 179-182, 184, 185, and 188-190 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,400,681 (*Bertin et al.*, herein referred to has *Bertin '681*), in view of U.S. Patent No. 5,940,372 (*Bertin et al.*, herein referred to has *Bertin '372*).

Claims 61-68, 103-110, 152-159, and 191-198 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bertin '681* in view of U.S. Patent No. 6,038,625 (*Ogino et al.*).

First, cancellation of Claims 60, 62-68, 102, 104-106, 108, 109, 133, 152-159, 188, and 190-198 renders the rejection of those claims moot.

Rejection of Claims 1-7, 23-25, 28, 31, 32, 35-37, 51-53, 56, 59, 61, 69 and 70

Applicant traverses the rejection of independent Claims 1 and 31, and respectfully submits that these independent claims, together with the claims dependent thereon, are patentably distinct from the cited prior art for at least the following reasons.

Applicant submits that a combination of *Bertin* '681 and *Bertin* '372, assuming such combination would even be permissible, would fail to teach or suggest, at least, an operation of allocating a passband (1221), during which there is allocated, on the one hand, to the transmissions in connected mode, the passband which is necessary to them, and on the other hand, all or part of the passband available to each transmission to be effected in non-connected mode.

The aspect of the present invention set forth in Claim 1 is a method of

communicating on a network (800) having communication devices (801 to 809). Each communication device is adapted to determine, for each item of information which it has to transmit, the path to cause it to follow on the network and a transmission mode, connected or non-connected. The method includes, for each communication device which is to effect a transmission in connected mode, an information operation (313) during which the communication device broadcasts, to all the other communication devices in the network, an item of information (253) representing the passband necessary for the transmission in connected mode. The method also includes an operation of allocating a passband (1221), during which there is allocated, on the one hand, to the transmissions in the connected mode, the passband which is necessary to them and, on the other hand, all or part of the passband available to each transmission to be effected in the non-connected mode.

An important feature of Claim 1 is an operation of allocating a passband (1221), during which there is allocated, on the one hand, to the transmissions in the connected mode, the passband which is necessary to them, and on the other hand, all or part of the passband available to each transmission to be effected in the non-connected mode. That is to say an operation, to control the flow of data within the network in order to avoid congestion therein by adjusting bandwidth allocated to non-connected mode transmissions.

Bertin '681, as understood by Applicant, relates to a method for determining an optimal path within a packet switching network, ensuring a specified quality of services and minimizing the resources which are used in the network, and minimizing the time to establish a connection between an origin and a destination node.

With reference to Figures 2 and 3 of *Bertin* '681, the packet switching network includes nodes 201 to 208, each having information on the topology of the

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network. As discussed on column 11, lines 16-29, a path (connection) through the network is calculated by the origin node using information in its Topology Database. The origin node sends a reservation request along the chosen path, and intermediate notes, if allowing the reservation, then adds this additionally reserved capacity to their total. These changes are reflected in topology broadcast updates sent by the intermediate nodes. *Bertin* '681 envisages the possibility of non-connected transmission modes as mentioned on column 7, lines 58-61, and also on column 15, lines 15-19. However, a reading of *Bertin* '681, and in particular column 11, lines 31 and following, reveals that concerning the question of reservation of passband for the connections in the network, this reservation takes place at connection setup. Thus, it is clear that the *Bertin* '681 method deals with connected transmission mode, and transmission in a non-connected mode being merely cited as a possibility.

Furthermore, as acknowledged by the Examiner in the Office Action on page 5, third paragraph, *Bertin* '681 does not disclose an operation of allocating a passband, on the one hand, to the transmission in connected mode, and on the other hand, all or part of the passband available to each transmission to be effected in non-connected mode, as recited in Claim 1.

For the above reasons, Applicant submits that Claim 1 is patentable over *Bertin* '681, taken alone.

Bertin '372, as understood by Applicant, relates to a process for selecting an optimal path for packets transmission without bandwidth reservation in communication systems supporting both bandwidth-reserved and non-bandwidth-reserved connections. *Bertin* '372, apparently discloses a method for selecting a routing path in a high-speed packet switching network, and more particularly for routing non-reserved bandwidth traffic

according to both reserved and non-reserved bandwidth on connections. It is also

mentioned on column 23, lines 53 to 60 that the invention concerns a method of

determining a route for non-reserved data traffic between an origin node and a destination

node in a network carrying both reserved data traffic on connections to which network

resources have been allocated and non-reserved data traffic on connections to which no

network resources are allocated.

Further, it is well explained on column 5, line 65 to column 6, line 7, that

the connectionless routing modes are quite efficient to route packets that do not require any

reservation nor quality service, and connection oriented routing is well adapted to route

packets when bandwidth reservation and quality of service are expected to be provided.

Still further, on column 6, line 2 and following, it is specified that connectionless routing

suits non-reserved traffic requirements while connection oriented routing suits reserved

traffic better. It is also explained that for this reason, it looks difficult to mix these two

types of traffic, reserved and non-reserved, in a single connection oriented network.

Moreover, on column 14, line 20 and following, an in particular lines 22

and 23, non-reserved connections are defined as being non-reserved network connections

which do not have bandwidth set aside either implicitly or explicitly.

Still further, the procedure of selecting non-reserved path is mentioned on

column 19, line 38 and following, where it is specified, in particular (at line 40), that "each

connection request includes the following input parameters . . ." (at lines 44 and 45) "the

estimation of bandwidth required for the new connection . . ". , and (at line 51) that "for

each non-reserved connection request, . . .".

Thus, a reading of Bertin '372, and in particular taking account of the

above, the Bertin '372 method applies only to connected mode transmission, and that this

mode of transmission deals with the routing of data traffic for which bandwidth is reserved (reserved traffic) and data traffic for which bandwidth is not reserved (non-reserved traffic). Accordingly, nothing has been found in *Bertin* '372 that teaches or suggests transmission which is to be effected in non-connected mode.

Further, nothing has been found in *Bertin* '372 that teaches or suggests an information operation during which each communication device which is to effect a transmission in connected mode broadcasts, to all the other communication devices in the network, an item of information representing the passband necessary for the transmission in connected mode, as recited in Claim 1 of the present invention.

Furthermore, "allocating . . . all or part of the passband available to each transmission to be effected in non-connected mode", as recited in Claim 1, allows control of the flow of data in the network and therefore prevents any congestion of the network. In fact, this allocation of "all or part of the passband available to each transmission to be effected in non-connected mode" constitutes an adjustment of bandwidth which can be done as a function of the actual throughput of data within the network. Support for this is found on page 7, lines 25 to 28, of the originally-file specification.

Nothing has been found in *Bertin* '372 that deals with the problem of congestion control in the network. *Bertin* '681, for its part, deals with congestion control in the network. On page 9, lines 25 to 31, the *Bertin* '681 method makes provisions for enforcing the bandwidth reservation agreements between the network's users and the network which are established at the call set up time, and estimating actual bandwidth and adjusting reservation, if necessary, during the life of the connection. When taking into account the above, adjustment of the reserved bandwidth can be made in the network for the connected transmission mode. However, nothing has been found in *Bertin* '681 that

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teaches or suggests controlling the flow of data within the network in order to avoid congestion therein <u>by adjusting bandwidth allocated to non-connected mode transmissions</u>. That is, nothing has been found in either *Bertin* '372 nor *Bertin* '681 that discloses an operation of allocating . . . all or part of the passband available to each transmission to be effected in non-connected mode, as recited in Claim 1.

Accordingly, Applicant submits that Claim 1 is patentable over the cited art, and respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a).

Independent Claim 31 is a device claim corresponding to method Claim 1, and is believed to be patentable for at least the same reasons as discussed above in connection with Claim 1.

Rejection of Claims 71-84, 87-96, 98-101, 103 and 110-112

Applicant traverses the rejection of independent Claims 71 and 87, and respectfully submits that these independent claims, together with the claims dependent thereon, are patentably distinct from the cited prior art for at least the following reasons.

Applicant submits that a combination of *Bertin* '681 and *Bertin* '372, assuming such combination would even be permissible, would fail to teach or suggest, at least, within the same network both the different operations that allow to transmit an item of information in connected mode and an item of information in non-connected mode, an operation of transmitting information in the non-connected mode, when a path is deemed to be a variable for transmission of the information.

The aspect of the present invention set forth in Claim 71 is a method of communicating between communication devices (101 to 105, 801 to 809) in a packet switched network having at least one switch (209), comprising a transmission mode

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determination operation (1302), during which, for each item of information to be transmitted, a transmission mode is determined, connected or non-connected. For each item of information to be transmitted in connected mode, an operation (1304 to 1308, 301 to 313) is performed of reserving a path on the network, and then an operation of transmitting the information (314), in connected mode, on the path reserved during the reservation operation is performed. For each item of information to be transmitted in non-connected mode an operation of estimating the availability of a path on the network, and then, when a path is deemed to be available for transmission of the information, an operation of transmitting the information, on the path, in non-connected mode. Accordingly, the invention recited in Claim 71 provides, on a packet switched network, the transmission of data in connected mode, comprising a phase of reserving resources on the network, and on the other hand, the transmission of data in non-connected mode without a resource reservation phase.

One important feature of Claim 71 is that an operation of transmitting information in non-connected mode, when a path is deemed to be available for transmission of the information. That is, it enables information transmitted in non-connected mode to be transmitted only if it is deemed that such transmission can be effected. Accordingly, the risk of congestion on the network is limited, even if transmissions in non-connected mode are enabled.

Nothing has been found in *Bertin* '681, nor *Bertin* '372 that discloses that within the same network both the different operations that allow to transmit an item of information in connected mode and an item of information in non-connected mode, and that information transmitted in non-connected mode to be transmitted only if it is deemed that such transmission can be effected. In this respect, the arguments mentioned above in

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connection with Claim1 as to the absence of teaching with respect to non-connected mode similarly applies to Claim 71.

Accordingly, Applicant submits that Claim 71 is patentable over the cited art, and respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a).

Independent Claim 87 is a device claim corresponding to method Claim 71, and is believed to be patentable for at least the same reasons as discussed above in connection with Claim 71.

Rejection of Claims 132, 135, 136, 138, 139, 141-148, 150 and 151

As shown above, Applicant has amended independent Claim 132 in terms that more clearly define the present invention. Applicant submits that this amended independent claim, together with the remaining claims dependent thereon, are patentably distinct from the cited prior art for at least the following reasons.

The aspect of the present invention set forth in Claim 132 is a device for communicating on a network. The device includes a memory (204A) adapted to store a load table containing information relating to the load on each link in the network, and is adapted, for establishing a connection intended for the transmission of information in connected mode. The device determines a passband requirement for the transmission of said information, connected mode. The device also determines if any path is available for the transmission, as a function of information stored in the load table. When an available path is determined, the device transmits an item of information representing the passband requirement, to the following communication device on the path, to update the load table, and to broadcast, to at least all the communication devices outside the path, an item of information representing the passband requirement. The source communication device,

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which is a source of information to be transmitted in the connected mode, is adapted to vary the size of data packets to be transmitted on the network with the load on the path and the transmission rate of the packets on the path.

An important feature of Claim 132 is that Claim 132 is limited to a source communication device, which is a source of information to be transmitted in the connected mode, and is adapted to vary the size of data packets to be transmitted on the network with the load on the path and the transmission rate of the packets on the path. This feature allows for better management of the bandwidth on the selected path.

Applicant submits that *Bertin* '681 and *Bertin* '372, taken alone or in combination, assuming such a combination would even be permissible, are not seen to disclose or suggest the invention as defined by independent Claim 132, and particularly with respect to the source communication device, which is a source of information to be transmitted in the connected mode, and is adapted to vary the size of data packets to be transmitted on the network with the load on the path and the transmission rate of the packets on the path.

Accordingly, Applicant submits that Claim 132 is patentable over the cited art, and respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a).

Rejection Claims 175-177, 179-182, 184, 185, 189, 199 and 200

As shown above, Applicant has amended independent Claim 175 in terms that more clearly define the present invention. Applicant submits that this amended independent claim, together with the remaining claims dependent thereon, are patentably distinct from the cited prior art for at least the following reasons.

The aspect of the present invention set forth in Claim 175 is a device for

communicating on a network having communication devices (801 to 809), each able to determine the path to be followed by each item of information which it has to transmit. The device is adapted, when it requires a connection associated with a path, to effect a transmission of information to a destination communication device to cause a transmission means to transmit, to each communication device (802 to 804) on the path, an item of information requesting (251) the establishment of a connection, and on reception of an item of information on the acceptance of a connection (252) coming from the destination communication device, to cause the transmission means to broadcast, to all the communication devices in the network (802 to 809), an item of information on the establishment of the connection (253). The device is adapted so that the request to establish a connection, sent by the source communication device, includes an item of information representing an application requirement for the transmission in connected mode associated with the connection.

One important feature of Claim 175 is that the device is adapted so that the request to establish a connection, sent by the source communication device, includes an item of information representing an application requirement for the transmission in connected mode associated with the connection. That is, the information on the application requirement will enable each communication device on the path to determine the traffic parameters which depend on the application requirement. Support for this feature is disclosed on page 27, lines 1 and 2, of the originally-filed specification. Further, on page 62, lines 24 to 27, of the originally-filed specification, it is specified what is meant by traffic parameters (passband, size of packets transmitted, packet transmission rates and priority levels of communication).

Bertin '681 is not seen to disclose sending such an item of information

representing the application requirement for the transmission in the connected mode associated with the connection. That is say, in the "Connecting Set Up" process of the *Bertin* '681 method, described on column 11, line 45 and following, it merely discloses that the Connection Request is specified via a set of parameters (origin and destination network address, and data flow characteristics). However, nothing has been found in *Bertin*'681, nor in *Bertin* '372, that teaches or suggests that a device is adapted so that the request to establish a connection, sent by the source communication device, includes an item of information representing an application requirement for the transmission in connected mode associated with the connection.

Applicant submits that *Bertin* '681 and *Bertin* '372, taken alone or in combination, assuming such a combination would even be permissible, are not seen to disclose or suggest the invention as defined by independent Claim 175, and particularly with respect to a device is adapted so that the request to establish a connection, sent by the source communication device, includes an item of information representing an application requirement for the transmission in connected mode associated with the connection.
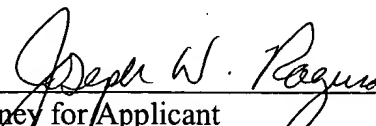
Accordingly, Applicant submits that Claim 175 is patentable over the cited art, and respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a).

The other rejected claims in this application depend from one or another of the independent claims discussed above, and, therefore, are submitted to be patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, individual reconsideration of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

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Applicant's undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.
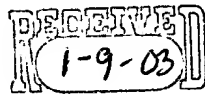
Respectfully submitted,

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NYMAIN 313883

VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

1.   (Amended) Method of communicating on a network (800) having

communication devices (801 to 809), each communication device being adapted to determine,

for each item of information which it has to transmit, the path to cause it to follow on the

network and a transmission mode, connected or non-connected, [characterised in that it includes]

said method comprises:

        for each communication device which is to effect a transmission in

connected mode, an information operation (313) during which said communication device

broadcasts, to all the other communication devices in the network, an item of information (253)

representing the passband necessary for said transmission in connected mode, and

        an operation of allocating a passband (1221), during which there is

allocated, on the one hand, to the transmissions in connected mode, the passband which is

necessary to them and, on the other hand, all or part of the passband available to each

transmission to be effected in non-connected mode.

2.   (Amended) Communication method according to Claim 1,

[characterised in that it includes] further comprises, for the establishment of a connection:

        effected by the source communication device (801) intended to transmit

information on said path, an operation of transmitting (305), to each communication device

placed on said path, referred to as "intermediate" (803, 804), an item of information (251)

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representing the passband necessary for said connection, and

    –   effected by each intermediate communication device on said path, an

operation of determining the availability (1402, 1404) of the link leading to the following

communication device on said path and, in the event of unavailability, an operation of

transmitting (333), to the source communication device, an item of information representing the

unavailability of said path.

    3. (Twice Amended) Communication method according to Claim 1,

[characterised in that it includes] further comprises, for each transmission of information, a flow

control operation performed by each of the intermediate communication devices on the path

followed by said information.

    4. (Amended) Communication method according to Claim 3,

[characterised in that] wherein the flow control operation performed by each intermediate

communication device is performed in accordance with IEEE 1355.

    5. (Twice Amended) Communication method according to Claim 1

[characterised in that it includes] further comprises:

    –   for each communication device in the network, following each

information operation, an operation of determining the passband (1303, 1403, 1503) available on

each link, taking into account said information, and

    –   for each so-called "source" communication device which is to effect a

transmission in non-connected mode to a destination communication device:

   • an operation of determining the availability of a path for a transmission

in non-connected mode, during which it is determined whether at least one path going from said

source communication device to sold destination communication device is at least partially

available for said transmission,

   • and, in the affirmative, an operation of transmitting on said path, in

non-connected mode.

   6.   (Twice Amended) Communication method according to Claim 1,

[characterised in that it includes] further comprises an information transmission operation (254,

257, 259) taking several priority levels into account.

   7.   (Amended) Communication method according to Claim 6,

[characterised in that] wherein a priority level is allocated to transmission in non-connected

mode.

   8.   (Twice Amended) Communication method according to Claim 6,

[characterised in that] wherein, during the passband allocation operation (1221), the passband

associated with the priority level corresponding to the non-connected mode varies as a function

of a period which did not give rise to any transmission.

   9.   (Amended) Communication method according to Claim 8,

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[characterised in that] wherein [the] said period is a period separating the last transmission in non-connected mode and the next transmission in connected mode.

10.   (Twice Amended) Communication method according to Claim 6, [characterised in that] wherein, during the passband allocation operation (1221), the passband associated with the priority level corresponding to the non-connected mode varies as a function of a number of packets not transmitted during a predetermined period.

11.   (Twice Amended) Communication method according to Claim 6, [characterised in that] wherein the predictive real-time traffic is transmitted with a priority level greater than that of the guaranteed real-time traffic.

12.   (Twice Amended) Communication method according to Claim 6, [characterised in that] wherein each priority level is associated with a list of virtual channels (1105 to 1110), successively used.

- Claim 13 has been canceled.

14. ... (Twice Amended) Communication method according to Claim 12, [characterised in that it includes] further comprises a traffic parameter determination operation (1221), during which a size of packets transmitted on said network is determined, said operation taking into account the load on said network.

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15. (Twice Amended) Communication method according to Claim 12, [characterised in that it includes] _further comprises_ a traffic parameter determination operation (1221), during which a number of packets to be sent on said network is determined, said operation taking into account the load on said network.

16. (Twice Amended) Communication method according to Claim 12, [characterised in that it includes] _further comprises_ a traffic parameter determination operation (1221) during which a period available for sending the packets remaining to be sent on said network is determined, said operation taking into account the load on said network.

Claims 17-19 have been canceled.

20. (Twice Amended) Communication method according to Claim 6, [characterised in that it includes] _further comprises_ a control information transmission operation, during which each item of control information is transmitted with the highest priority level.

21. (Twice Amended) Communication method according to Claim 6, [characterised in that] _wherein_, for at least one priority level, the information not transmitted during a predetermined interval of time is eliminated before transmission...

22. (Twice Amended) Communication method according to Claim 6, [characterised in that] _wherein_, for at least one priority level, the information not transmitted

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during a predetermined interval of time is stored in order to be transmitted during the following

time interval.

23.   (Twice Amended) Communication method according to Claim 1, [characterised in that] wherein the real-time traffic, predictive or guaranteed, is transmitted in connected mode.

24.   (Twice Amended) Communication method according to Claim 1, [characterised in that] wherein the elastic traffic is transmitted in non-connected mode.

25.   (Twice Amended) Communication method according to Claim 1, [characterised in that it includes] further comprises, for each communication device placed on the path intended to be followed by a transmission in connected mode, a checking operation (1404), during which it is checked that the passband necessary for said transmission is available on said path.

26.   (Twice Amended) Communication method according to Claim 1, [characterised in that] wherein, for the predictive traffic, the information not transmitted during a predetermined time interval is eliminated before transmission.

27.   (Twice Amended) Communication method according to Claim 1, [characterised in that] wherein, for the guaranteed traffic, the information not transmitted during

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a predetermined time interval is stored in order to be transmitted during the following time

interval.

28. (Twice Amended) Method according to Claim 1, [characterised in that] wherein each communication device effects each information transmission by packet switching.

29. (Twice Amended) Communication method according to Claim 1, [characterised in that it includes] further comprises, for establishing a connection:

A/ performed by a communication device which is a source of information to be transmitted in connected mode:

- an operation of determining a passband requirement for the transmission of said information in connected mode,

- an operation of determining any path available for said transmission, according to information stored in a load table for each link in the network, and

- when an available path is determined:

• an operation of sending an item of information representing said passband requirement to the following communication device on said path, and

• an operation of updating said load table for the links in the network,

- an operation of broadcasting, to at least all the communication devices outside the path, an item of information representing said passband requirement,

B/ performed by each intermediate communication device on said path:

- an operation of determining availability of said path, for said

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communication, according to information stored in a load table for each link in the network, and

         when the path is available:

        •   an operation of sending an item of information representing said

passband requirement, to the following communication device on the path, and

        •   an operation of updating a load table for the links in the network,

C/ performed by each communication device outside said path:

        -     an operation of updating a load table for the links in the network.

      30.   (Twice Amended) Communication method according to Claim 1,

between communication devices each able to determine, for each item of information which it

has to transmit, a path to cause it to follow, [characterised in that it includes] further comprises:

        -     performed by each so-called "source" communication device, which

requires a connection associated with a path, in order to effect a transmission of information to a

destination communication device, an operation of requesting a connection, during which the

source communication device sends, to each communication device on said path, a request to

establish a connection,

        -     when establishment of said connection is possible, performed by at

least the destination communication device, an operation of sending, to the source

communication device, a connection acceptance,

        -     performed by the source communication device, an operation of

broadcasting, to all the communication devices in the network, an item of information

representing the establishment of the connection,

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performed by each communication device on said path, on reception of

said information representing the establishment of a connection, an operation of confirmation of

establishment of said connection, and

performed by each communication device outside said path, on

reception of said information representing the establishment of a connection, an operation of

storing an item of information representing said connection.

31.   (Amended) Device for communication on a network having

communication devices, each communication device being adapted to determine, for each item

of information which it has to transmit, a path to cause it to follow on the network and a

transmission mode, connected or not, [characterised in that it has] said device comprises:

- an information means adapted, for each transmission in connected

mode, to broadcast, to all the other communication devices in the network, an item of

information representing the passband necessary for said transmission in connected mode, and

- a passband allocation means, adapted to allocate, on the one band, to

the transmissions in connected mode, the passband which is necessary to them, and, on the other

hand, all or part of the passband available to each transmission to be effected in non-connected

mode.

32.   (Amended) Communication device according to Claim 31,

[characterised in that] wherein:

- the information means is adapted, for the establishment of a connection,

to transmit, to each communication device placed on said path, referred to as "intermediate", an

item of information representing the passband necessary for said connection, and

it has a means of determining availability in connected mode, adapted,

when said communication device is an intermediate communication device on a path intended to

be associated with a connection, to determine the availability of the link leading to the following

communication device on said path and, in the event of unavailability, to cause a transmission

means to transmit, to the source communication device, an item of information representing the

unavailability of said path.

33.   (Twice Amended) Communication device according to Claim 31,

[characterised in that it has] further comprises a flow control means adapted, for each

transmission of information in non-connected mode for which said device is incorporated in an

intermediate communication device, to check the availability of the path followed by said

information.

34.   (Amended) Communication device according to Claim 33,

[characterised in that] wherein it is adapted to implement communication procedures in

accordance with IEEE 1355.

35.   (Twice Amended) Communication device according to Claim 31,

[characterised in that it has] further comprises an available passband determination means

adapted:

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- to determine the passband available on each link of a path associated

with a connection, on reception of each item of information representing a passband coming from

another communication device, taking said information into account, and

. when said communication device must effect a transmission in

non-connected mode to a destination communication device, to determine the at least partial

availability of at least one path going from said source communication device to said destination

communication device for a transmission in non-connected mode.

36. (Twice Amended) Communication device according to Claim 31,

[characterised in that it has] further comprises an information transmission means taking into

account several priority levels.

37. (Amended) Communication device according to Claim 36,

[characterised in that] wherein the transmission means is adapted so that a priority level is

allocated to the transmission in non-connected mode.

38. (Twice Amended) Communication device according to Claim 36,

[characterised in that] wherein the passband allocation means is adapted so that the passband

associated with the priority level corresponding to the non-connected mode varies according to a

period which has not given rise to any transmission.

39. (Amended) Communication device according to Claim 38,

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[characterised in that] wherein the passband allocation means is adapted so that said period is the period separating the last transmission in non-connected mode and the next transmission in connected mode.

·40.   (Twice Amended) Communication device according to Claim 36, [characterised in that] wherein the passband allocation means is adapted so that the passband associated with the priority level corresponding to the non-connected mode varies according to a number of packets not transmitted during a predetermined period.

41.   (Twice Amended) Communication device according to Claim 36, [characterised in that] wherein the information transmission means is adapted so that the predictive real-time traffic is transmitted with a priority level higher than that of the guaranteed real-time traffic.

42.   (Twice Amended) Communication device according to Claim 36, [characterised in that] wherein the information transmission means is adapted so that each priority level is associated with a list of virtual channels, used in succession.

43.   (Amended) Communication according to Claim 42, [characterised in that] wherein the information transmission means is adapted so that said virtual channels are associated with the outgoing traffic.

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44.   (Twice Amended) Communication device according to Claim 42, [characterised in that] wherein it includes a traffic parameter determination means adapted to determine a size of packets transmitted on said network, taking into account the load on said network.

45.   (Twice-Amended) Communication device according to Claim 42, [characterised in that it has] further comprises a traffic parameter determination means adapted to determine a number of packets to be sent on said network, taking into account the load on said network.

46.   (Twice Amended) Communication device according to Claim 42, [characterised in that it has] further comprises a traffic parameter determination means adapted to determine a period available for sending the packets remaining to be sent on said network, taking into account the load on said network.

Claim 47 has been canceled.

48.   (Twice Amended) Communication device according to Claim 36, [characterised in that] wherein the transmission means is adapted to transmit each item of control information with the highest priority level.

49.   (Twice Amended) Communication device according to Claim 36,

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[characterised in that] wherein the transmission means is adapted so that, for at least one priority level, the information not transmitted during a predetermined time interval is eliminated before transmission.

50.   (Twice Amended) Communication device according to Claim 36, [characterised in that] wherein the transmission means is adapted so that, for at least one priority level, the information not transmitted during a predetermined time interval is stored in order to be transmitted during the following time interval.

51.   (Twice Amended) Communication device according to Claim 31, [characterised in that] wherein it is adapted so that the real-time traffic, predictive or guaranteed, is transmitted in connected mode.

52.   (Twice Amended) Communication device according to Claim 31, [characterised in that] wherein it is adapted so that the elastic traffic is transmitted in non-connected mode.

53.   (Twice Amended) Communication device according to Claim 31, [characterised in that] wherein each communication device placed on the path intended to be followed by a transmission in connected mode, has a checking means adapted to check that the passband necessary for said transmission is available on said path.

54.   (Twice Amended) Communication device according to Claim 31, [characterised in that it has] <u>further comprises</u> a transmission means adapted to eliminate the information not transmitted during a predetermined time interval, for the predictive traffic.

55.   (Twice Amended) Communication device according to Claim 31, [characterised in that it has] <u>further comprises</u> a transmission means adapted to store, for a subsequent transmission, the information not transmitted during a predetermined time interval, for the guaranteed traffic.

56.   (Twice Amended) Device according to Claim 31, [characterised in that] <u>wherein</u> each communication device is adapted to implement a protocol for the transmission of information by packet switching.

57.   (Twice Amended) Communication device according to Claim 31, [characterised in that it has] <u>further comprises</u>:

-    a means of determining free time in said base period after sequencing of all the transmissions, adapted to organise all the other transmissions, and

-    a regulation means adapted to regulate the passband available for the transmissions in non-connected mode.

58.   (Amended) Communication device according to Claim 57, [characterised in that] <u>wherein</u> said regulation means is adapted:

to reduce the passband allocated to the transmissions in non-connected

mode, when the free time is negative, and

to increase the passband allocated to the transmissions in non-

connected mode, when the free time is positive.

59.   (Twice Amended) Communication device according to Claim 31,.

[characterised in that] wherein:

it has a memory adapted to store a load table containing information

relating to the load on each link in the network, and

it is adapted, for establishing a connection:

for the transmission of information in connected mode:

to determine a passband requirement for the transmission of said

information in connected mode,

to determine any path available for said transmission, according to

information stored in said load table, and, when an available path is determined,

to cause the transmission means to send an item of information

representing said passband requirement, to the following communication device on said path,

to update said load-table,

to cause the transmission means to broadcast, to at least all the

communication devices outside the path, an item of information representing said passband

requirement.

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Claim 60 has been canceled.

61. (Twice Amended) Computer, [characterised in that it has] comprising a communication device according to Claim 31.

Claims 62-68 have been canceled.

69. (Twice Amended) An information storage means which can be read by a computer or a microprocessor storing instructions of a computer program, [characterised in that] wherein it allows the implementation of a communication method according to Claim 1.

70. (Twice Amended) An information storage means which is removable, partially or totally, and which can be read by a computer or a microprocessor storing instructions of a computer program, [characterised in that] wherein it allows the implementation of a communication method according to Claim 1.

71. (Amended) Method of communicating between communication devices (101 to 105, 801 to 809) in a packet switched network having at least one switch (209), [characterised in that it includes] comprising a transmission mode determination operation (1302), during which, for each item of information to be transmitted, a transmission mode is determined, connected or non-connected, and then

    - for each item of information to be transmitted in connected mode:

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- an operation (1304 to 1308, 301 to 313) of reserving a path on said

network, and then

- an operation of transmitting said information (314), in connected mode,

on the path reserved during the reservation operation, and

for each item of information to be transmitted in non-connected mode:

- an operation of estimating the availability of a path on said network,

and then, when a path is deemed to be available for transmission of said information,

- an operation of transmitting said information, on said path, in

non-connected mode.

72.   (Amended) Communication method according to Claim 71,

[characterised in that] wherein the path reservation operation includes an operation of

transmitting (305), on said path, a message (251) including information representing the

application requirement for transmission in connected mode.

73.   (Twice Amended) Communication method according to Claim 71,

[characterised in that] wherein the operation of reserving a path on said network includes an

operation of updating (1303, 1307, 1403, 1407, 1503, 1504) a load table (1100) stored by each

communication device in the network.

74.   (Amended) Communication method according to Claim 73,

[characterised in that] wherein, during the availability estimation operation, values stored in the

load table (1100) of the communication device which has at least one item of information to be

transmitted are taken into account.

75.   (Twice Amended) Communication-method according to Claim 73, [characterised in that] <u>wherein</u> the table updating operation includes an operation of determining parameters (1303, 1403, 1503) representing the application requirement for transmission in connected mode.

76.   (Twice Amended) Communication method according to Claim 73, [characterised in that] <u>wherein</u> the load table updating operation includes an operation of storing in memory the passband available for each link (1001 to 1004) on a path leaving the communication device under consideration (1011 to 1013).

77.   (Twice Amended) Communication method according to Claim 73, [characterised in that] <u>wherein</u> the load table updating operation includes an operation of storing in memory the passband available for each link (1001 to 1007) in the network forming part of a path associated with a connection (1011 to 1015).

78.   (Twice Amended) Communication method according to Claim 71, [characterised in that] <u>wherein</u> the path reservation operation includes an operation of checking (1404, 1405), by means of each intermediate communication device (803, 804) on said path, the availability of the path to be reserved.

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79.   (Twice Amended) Communication method according to Claim 71,

[characterised in that] <u>wherein</u> the estimation operation consists of determining whether at least

one path is at least partially available for transmission in non-connected mode.

80.   (Twice Amended) Communication method according to Claim 71,

[characterised in that] <u>wherein,</u> during the availability estimation operation, information

representing transmissions in connected mode is taken into account.

81.   (Twice Amended) Communication method according to Claim 71,

[characterised in that] <u>wherein</u> the estimation operation is independent of any transmissions in

non-connected mode, coming from other communication devices in the network.

82.   (Twice Amended) Method according to Claim 71, [characterised in

that] <u>wherein</u> the network uses the IEEE 1355 communication protocol.

83.   (Twice Amended) Method according to Claim 71, [characterised in

that] <u>wherein</u> the reservation operation includes an operation of transmitting (305) a message

(251) containing information representing each link on the path to be reserved.

84.   (Twice Amended) Method according to Claim 71, [characterised in

that] <u>wherein</u> the reservation operation includes:

-          an operation of broadcasting (313) a table updating message (253)

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destined for all the communication devices in the network (802 to 809), and

- for each communication device in the network which is not on the path

to be reserved, an operation of updating a load table (1504).

85.   (Twice Amended) Communication method according to Claim 71, [characterised in that it includes] further comprising, for establishing a connection:

A/ performed by a communication device which is a source of information to be transmitted in connected mode:

- an operation of determining a passband requirement for transmission of said information in connected mode,

- an operation of determining any path available for said transmission, according to information stored in a load table for each link in the network, and

- when an available path is determined:

□ an operation of sending an item of information representing said passband requirement to the following communication device on said path, and

□ an operation of updating said load table for the links in the network,

- an operation of broadcasting, to at least all the communication devices outside the path, an item of information representing said passband requirement,

B/ performed by each intermediate communication device on said path:

- an operation of determining the availability of said path, for said communication, according to information stored in a load table for each link in the network, and

- when the path is available:

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establishment of said connection, and

- performed by each communication device outside said path, on reception of said information representing the establishment of a connection, an operation of storing in memory an item of information representing said connection.

87.   (Amended) Device for communicating on a packet switched network having at least one switch (209), [characterised in that it has] comprising:

- a transmission mode determination means (204A, 204B, 206A, 206B, 234, 236) adapted to determine, for each item of information to be transmitted, a transmission mode, connected or non-connected,

- a reservation means (204A, 204B, 206A, 206B, 234, 236) adapted, for each item of information to be transmitted in connected mode, to reserve a path on said network,

- a path availability estimation means (204A, 204B, 206A, 206B, 234, 236) adapted, for each item of information to be transmitted in non-connected mode, to estimate the availability of at least one path, and

- a transmissions means (204A, 204B, 206A, 206B, 234, 236) adapted on the one hand to transmit, in connected mode, each item of information to be transmitted in connected mode, on the path reserved by the reservation means, and on the other hand to transmit, in non-connected mode, on a path deemed to be available by the availability-estimation means, each item of information to be transmitted in non-connected mode.

88.   (Amended) Communication device according to Claim 87,

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[characterised in that] wherein the reservation means is adapted to cause the transmission means

to transmit, on said path, a message (251) including information representing the application

requirement for transmission in connected mode.

89.   (Twice Amended) Communication device according to Claim 87,

[characterised in that it has] further comprising a memory adapted to store a load table (1100)

and in that the reservation means is adapted to update said load table.

90.   (Amended) Communication device according to Claim 89,

[characterised in that] wherein the estimation means is adapted to take into account values stored

in the load table (1100) in order to estimate the availability of a path.

91.   (Twice Amended) Communication device according to Claim [87] 89,

[characterised in that] wherein, in order to update the load table (1100), the reservation means is

adapted to determine parameters representing the application requirement for transmission in

connected mode.

92.   (Twice Amended) Communication device according to Claim 89,

[characterised in that] wherein, in order to update the load table (1100), the reservation means is

adapted to store therein the passband available for each link (1001 to 1004) in a path (1011 to

1013) leaving the communication device under consideration.

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93.   (Twice Amended) Communication device according to Claim 89, [characterised in that] wherein, in order to update the load table (1100), the reservation means is adapted to store therein the passband available for each link (1001 to 1007) in the network forming part of a path associated with a connection (1011 to 1015).

94.   (Twice Amended) Communication device according to Claim 87, [characterised in that] wherein the path reservation means is adapted to cause each intermediate communication device (803, 804) on said path to check the availability of the path to be reserved.

95.   (Twice Amended) Communication device according to Claim 87, [characterised in that] wherein the estimation means is adapted to determine whether at least one path is at least partially available for transmission in non-connected mode.

96.   (Twice Amended) Communication device according to Claim 87, [characterised in that] wherein the estimation means is adapted to take into account information representing transmissions in connected mode.

97.   (Twice Amended) Communication device according to Claim 87, [characterised in that] wherein the estimation means is adapted not to take into account any transmissions in non-connected mode coming from other communication devices in the network.

98.   (Twice Amended) Device according to Claim 87, [characterised in that]

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wherein the transmission means is adapted to implement the IEEE 1355 communication

protocol.

99.   ◦ (Twice Amended) Device according to Claim 87, [characterised in that]

wherein the reservation means is adapted to cause the transmission means to transmit a message

(251) containing information representing each link on the path to be reserved for each

transmission in connected mode.

100.   (Twice Amended) Device according to Claim 87, [characterised in that]

wherein the reservation means is adapted:

-    to cause the transmission means to broadcast a table-updating message

(253) intended for all the communication devices in the network, and

-    when the communication device which includes said reservation means

receives such a message, and when it is not on the path to be reserved, to update a load table.

101.   (Twice Amended) Communication device according to Claim 87,

[characterised in that] wherein it:

-    has a memory adapted to store a load table containing information

relating to the load on each link in the network, and

-    is adapted, for establishing a connection:

for transmitting information in connected mode:

-    to determine a passband requirement for transmission of said

information in connected mode,

- to determine any path available for said transmission, according to information stored in said load table,

and, when an available path is determined, -

- to cause the transmission means to send an item of information representing said passband requirement, to the following communication device on said path,

- to update said load table,

- to cause the transmission means to broadcast, to at least all the communication devices outside the path, an item of information representing said passband, requirement.

Claim 102 has been canceled.

103. (Twice Amended) Computer, [characterised in that it has] comprising a communication device according to Claim 87. -

Claims 104-106 have been canceled.

107. (Twice Amended) Television receiver, [characterised in that it has] comprising a communication device according to Claim 87.

Claims 108 and 109 have been canceled.

110.   (Twice Amended) Audio/video reader, [characterised in that it has]·· comprising a communication device according to Claim 87.

111.   (Twice Amended) An information storage means which can be read by a computer or a microprocessor storing instructions of a computer program, [characterised in that] wherein it allows the implementation of a communication method according to Claim [86] 71.

112.   (Twice Amended) An information storage means which is removable, partially or totally, and which can be read by a computer or a microprocessor storing instructions of a computer program, [characterised in that] wherein it allows the implementation of a communication method according to Claim [86] 71.

113.   (Amended) Method of communicating on a network, [characterised in that it includes] comprising, for establishing a connection:

A/ performed by a communication device which is a source of information to be transmitted in connected mode (801):

   -     an operation (1302) of determining a passband requirement for transmission of said information in connected mode,

   -     an operation of determining any path available for said transmission (1304), according to information stored in a load table for each link in the network, and

   -     when an available path is determined:

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- an operation of transmitting (305) an item of information representing said passband requirement (251) to the following communication device on said path (803), and

- an operation of updating (1307) said load table for the links in the network,

an operation of broadcasting, to at least all the communication devices outside the path (805 to 809), an item of information representing said passband requirement (253),

B/ performed by each intermediate communication device (803, 804) on said path:

an operation of determining the availability of said path (1404), for said communication, according to information stored in a load table for each link in the network, and

- when the path is available:

- an operation of transmitting (336) an item of information representing said passband requirement to the following communication device on said path (804, 802), and

- an operation of updating said load table (1407) for the links in the network,

C/ performed by each communication device outside said path (805 to 809):

- an operation of updating a load table for the links in the network.

114.   (Amended) Communication method according to Claim 113, [characterised in that] wherein, during the operation of transmitting (305) said passband requirement (251) to the following communication device on said path, the source

communication device (801) transmits an item of information representing an application requirement for said transmission in connected mode.

115. (Amended) Communication method according to Claim 114, [characterised in that it includes] further comprising, performed by each communication device in the network (801 to 809), an operation of determining communication parameters (1303, 1403, 1503) depending on the application requirement, and said parameters are taken into account in performing the table updating operation (1307, 1407, 1504).

116. (Twice Amended) Communication method according to Claim 113, [characterised in that it includes] further comprising, at the end of the transmission in connected mode:

performed by a communication device which is a source of information transmitted in connected mode, an operation of broadcasting (320) an item of information representing the release of the connection (256), to all the communication devices in the network (802 to 809), and

performed by each communication device in said network, an operation of updating a load table for the links in the network.

117. (Twice Amended) Communication method according to Claim 113, [characterised in that] wherein, during the establishment of a connection, the operation of broadcasting (313), to at least all the communication devices outside the path, an item of

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information representing said passband requirement is performed after each communication

device on said path has performed:

an operation of determining the availability of said path, for said

communication, as a function of information stored in a load table for each link in the network,

and

when the path is available:

• an operation of transmitting said passband requirement to the following

communication device on the path, and

• an operation of updating a load table for the links in the network.

118. (Twice Amended) Communication method according to Claim 113,
[characterised in that it includes] further comprising, during the establishment of a connection,

performed by the source communication device, an operation of determining the whole of the

path (1304) intended to be followed by the information to be transmitted in connected mode.

119. (Twice Amended) Communication method according to Claim 113,
[characterised in that] wherein, during the operation of transmitting (305) an item of information

representing said passband requirement to the following communication device on said path

(251), the source communication device transmits an item of information representing said path.

120. (Twice Amended) Communication method according to Claim 113,
[characterised in that] wherein, during the broadcasting operation (313), the information

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representing said passband requirement follows a spanning tree for the network where at least

half the leaves are intermediate communication devices or the destination communication device,

on the path associated with the connection.

     121.   (Twice Amended) Communication method according to Claim 113,

[characterised in that] wherein, during the broadcasting operation (313), the information

representing said passband requirement is broadcast with an item of information representing the

whole of the path associated with said connection.

     122.   (Twice Amended) Communication method according to Claim 113,

[characterised in that] wherein each load table includes, for each link in the network, a reference

(1120) concerning each path which includes said link and which is associated with a connection.

     123.   (Amended) Communication method according to Claim 122,

[characterised in that] wherein, with each link in the network, there is associated an item of

information representing the passband available on said link.

     124.   (Twice Amended) Communication method according to Claim 113,

[characterised in that] wherein each load table includes, for each path, a reference concerning

each link which it includes.

     125.   (Amended) Communication method according to Claim 124,

[characterised in that] wherein, with each path, there is associated an item of information representing the passband available on said path.

126.   (Twice Amended) Communication method according to Claim 123, [characterised in that] wherein the item of information representing the passband available on said path is equal to the information on the passband available on the least available link in said path.

127.   (Twice Amended) Communication method according to Claim 123, [characterised in that] wherein, during the path determination operation (1304), the chosen path is a path whose availability is the highest.

128.   (Twice Amended) Communication method according to Claim 113, [characterised in that it includes] further comprising, performed by the source communication device, an operation of determining the size of the packet to be transmitted on the network (1221), taking into account the load on said network.

129.   (Twice Amended) Communication method according to Claim 113, [characterised in that it includes] further comprising, performed by the source communication device, an operation of determining the frequency of sending of packets to be transmitted on the network (1221), taking into account the load on said network.

130.   (Twice Amended) Method according to Claim 113, [characterised in that] <u>wherein</u> each communication device effects each transmission of information by packet switching.

131.   (Twice Amended) Method according to Claim 113, for communicating between communication devices each able to determine, for each item of information which it has to transmit, a path to cause it to follow,[characterised in that it includes] <u>further comprising</u>:

-    performed by each so-called "source" communication device which requires a connection associated with a path, in order to effect a transmission of information to a destination communication device, a connection request operation, during which the source communication device transmits, to each communication device on said path, a request to establish a connection,

-    when the establishment of said connection is possible, performed by at least the destination communication device, an operation of sending, to the source communication device, a connection acceptance,

-    performed by the source communication device, an operation of broadcasting, to all the communication devices in the network, an item of information representing the establishment of the connection,

-    performed by each communication device on said path, on reception of said item of information representing the establishment of a connection, an operation of confirming the establishment of said connection, and

-    performed by each communication device outside said path, on

reception of said item of information representing the establishment of a connection, an operation

of storing in memory an item of information representing said connection.

_132.   (Amended) Device for communicating on a network, [characterised in

that] comprising: -

[it has] a memory (204A) adapted to store a load table containing

information relating to the load on each link in the network, and

[it] is adapted, for establishing a connection intended for the

transmission of information in connected mode:

•   to determine a passband requirement for the transmission of said

information, connected mode,

•   to determine any path available for said transmission, as a function of

information stored in said load table,

and, when an available path is determined,

•   to transmit an item of information representing said passband

requirement, to the following communication device on said path,

•   to update said load table,

•   to broadcast, to at least all the communication devices outside the path,

an item of information representing said passband requirement, the source communication device

which is a source of information to be transmitted in connected mode being adapted to vary size

of data packets to be transmitted on the network with the load on the path and transmission rate

of the packets on said path.

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Claims 133 and 134 have been canceled.

135.   (Twice Amended) Communication device according to Claim 132, [characterised in that] wherein it is adapted, in order to transmit said passband requirement to the following communication device on said path, to transmit an item of information representing an application requirement for said transmission in connected mode.

136.   (Amended) Communication device according to Claim 135, [characterised in that it has] further comprising a means of determining communication parameters depending on the application requirement, and in that it is adapted to update the load table whilst taking said parameters into account.

137.   (Twice Amended) Communication device according to Claim 132, [characterised in that] wherein it is adapted, in order to end a transmission in connected mode, to broadcast an item of information representing the release of the connection to all the communication devices in the network, so that each communication device in said network updates a load table for the links in the network.

138.   (Twice Amended) Communication device according to Claim 132, [characterised in that] wherein it is adapted, for the establishment, to determine the whole of the path intended to be followed by the information to be transmitted in connected mode.

139. (Twice Amended) Communication device according to Claim 132, [characterised in that] wherein, in order to transmit an item of information representing said passband requirement to the following communication device on said path, it is adapted to transmit an item of information representing said path.

140. (Twice Amended) Communication device according to Claim 132, [characterised in that] wherein it is adapted to cause the item of information representing said passband requirement to follow a spanning tree for the network where at least half the leaves are intermediate communication devices or the destination communication device, on the path associated with the connection.

141. (Twice Amended) Communication device according to Claim 132, [characterised in that] wherein it is adapted to broadcast, with the item of information representing said passband requirement, an item of information representing the whole of the path associated with said connection.

142. (Twice Amended) Communication device according to Claim 132, [characterised in that] wherein said memory is adapted to store, in each load table, for each link in the network, a reference concerning each path which includes said link and which is associated with a connection.

143. (Amended) Communication device according to Claim 142,

[characterised in that] wherein said memory is adapted to store, in said [node] load table, for each

link in the network, an item of information representing the passband available on said link.

        144.   (Twice Amended) Communication device according to Claim 132,

[characterised in that] wherein said memory is adapted to store, in each load table, for each path,

a reference concerning each link which it includes.

        145.   (Amended) Communication device according to Claim 144,

[characterised in that] wherein said memory is adapted to store, in each load table, associated

with each path, an item of information representing the passband available on said path.

        146.   (Twice Amended) Communication device according to Claim 143,

[characterised in that] wherein said memory is adapted to store, in each load table, an item of

information representing the passband available on said path equal to the information on the

passband available on the least available link in said path.

        147.   (Twice Amended) Communication device according to Claim 144,

[characterised in that] wherein it is adapted, in order to determine a path, to choose the path

whose availability is the highest.

        148.   (Twice Amended) Communication device according to Claim 132,

[characterised in that it has] further comprising a means of determining the size of the packet to

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be transmitted on the network adapted to take into account the load on said network.

149.- (Twice Amended) Communication device according to Claim 132, [characterised in that it has] further comprising a means of determining the frequency of sending of packets to be transmitted on the network adapted to take into account the load on said network.

150. (Twice Amended) Device according to Claim 132, [characterised in that] wherein it is adapted to effect each transmission of information by packet switching.

151. (Twice Amended) Communication device according to Claim 132, on a network having communication devices each able to determine the path to be followed by each item of information which it has to send, [characterised in that] wherein it is adapted, when it requires a connection associated with a path, in order to effect a transmission of information to a destination communication device:

to cause the transmission means to send, to each communication device on said path, a message requesting the establishment of a connection, and

on reception of a connection acceptance message coming from the destination communication device, to cause said transmission means to broadcast, to all the communication devices in the network, a message containing information on the establishment of the connection.

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Claims 152-159 have been canceled.

160.   (Twice Amended) An information storage means which can be read by a computer or a microprocessor storing instructions of a computer program, [characterised in that] wherein it allows the implementation of a communication method according to Claim 113.

161.   (Twice Amended) An information storage means which is removable, partially or totally, and which can be read by a computer or a microprocessor storing instructions of a computer program, [characterised in that] wherein it allows the implementation of a communication method according to Claim 113.

162.   (Amended) Method of communicating on a network, between communication devices each able to determine the path to be followed by each item of information which it has to transmit, [characterised in that it includes] said method comprises:

- performed by each so-called "source" communication device (801) which requires a connection associated with a path, in order to effect a transmission of information to a destination communication device (802), an operation (305) requesting a connection, during which the source communication device transmits, to each communication device on said path, a request to establish a connection (251),

- when establishment of said connection is possible, performed by at least the destination communication device, an operation of transmitting (381), to the source communication device, a connection acceptance (252),

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- performed by the source communication device, an operation of broadcasting (313), to all the communication devices in the network, an item of information representing the establishment of the connection (253),

- performed by each communication device on said path (803, 804), on reception of said information representing the establishment of a connection, an operation (345) of confirming the establishment of said connection, and

- performed by each communication device outside said path (805 to 809) on reception of said information representing the establishment of a connection, an operation of storing in memory an item of information representing said connection (418).

163. (Amended) Communication method according to Claim 162, [characterised in that] wherein each communication device on said path (803, 804) performs, on reception of the request to establish a connection (251), an operation of verifying the possibility of establishing said connection (1404).

164. (Amended) Communication method according to Claim 163, [characterised in that] wherein each communication device on said path (803, 804), when, during the verification operation (1404), the possibility of establishing the connection has been verified, performs an operation of reserving resources necessary for said connection (1407).

165. (Amended) Communication method according to Claim 163, [characterised in that] wherein each communication device on said path (803, 804), when, during

the checking operation (1404), the possibility of establishing the connection is not verified,

performs an operation of transmitting (380), to the source communication device (801), an item

of information representing the impossibility of setting up the connection by said intermediate

communication device.

166.   (Twice Amended) Communication method according to Claim 162,

[characterised in that] wherein, when establishment of said connection is possible, the operation

of transmitting (381), to the source communication device, an item of information (252)

representing a connection acceptance, is performed solely by the destination communication

device (802).

167.   (Amended) Communication method according to Claim 166,

[characterised in that] wherein, in order to transmit said item of information representing a

connection acceptance (252), the destination communication device (802) performs an operation

of choosing a path independent of the path associated with the connection currently being

established.

168.   (Twice Amended) Communication method according to Claim 162,

[characterised in that it includes] further comprising, during the establishment of a connection,

performed by each communication device (801 to 809) in the network, an operation of updating a

load table containing information representing loads on links in the network incorporated in a

path associated with a connection.

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169.   (Amended) Communication method according to Claim 168,

[characterised in that] wherein, for the intermediate (803, 804) and destination (802) communication devices in the network, the load table updating operation is performed on reception of the request to establish a connection (251).

-170.   (Amended) Communication method according to Claim 169,

[characterised in that] wherein, for the communication devices in the network situated outside the path associated with the connection currently being established (805 to 809), the load table updating operation is performed on reception of the information representing the establishment of a connection.

171.   (Twice Amended) Communication method according to Claim 162,

[characterised in that] wherein the operation of broadcasting (313), to all the communication devices in the network (802 to 809), an item of information representing the establishment of the connection, an operation performed by the source communication device (801), is performed on a spanning tree for the network where at least half the leaves are intermediate communication devices or the destination communication device, on the path associated with the connection.

172.   (Twice Amended) Communication method according to Claim 162,

[characterised in that] wherein the request (251) to establish a connection, sent by the source communication device (801), includes an item of information representing the application requirement for the transmission in connected mode associated with said connection.

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173.   (Twice Amended) Communication method according to Claim 162, [characterised in that] wherein the connection establishment request (251) sent by the source communication device (801) includes an item of information representing the path associated with the connection currently being established.

174.   (Twice Amended) Communication method according to Claim 162, [characterised in that] wherein each communication device (801 to 809) effects each transmission of information by packet switching.

175.   (Amended) Device for communicating on a network having communication devices (801 to 809) each able to determine the path to be followed by each item of information which it has to transmit, [characterised in that] wherein it is adapted, when it requires a connection associated with a path, to effect a transmission of information to a destination communication device:

to cause a transmission means to transmit, to each communication device (802 to 804) on said path, an item of information requesting (251) the establishment of a connection; and

on reception of an item of information on the acceptance of a connection (252) coming from the destination communication device, to cause said transmission means to broadcast, to all the communication devices in the network (802 to 809), an item of information on the establishment of the connection (253), the device being adapted so that the request to establish a connection, sent by the source communication device, includes an item of

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information representing an application requirement for the transmission in connected mode associated with said connection.

176.   (Amended) Communication device according to Claim 175, [characterised in that] <u>wherein</u> it is adapted, when it is the destination communication device (802) for a request to establish a connection (251), to determine whether the establishment of said connection is possible and, in this case, to cause the transmission means to transmit, to the source communication device (801), an item of information on the acceptance of the connection (252).

177.   (Twice Amended) Communication device according to Claim 175, [characterised in that] <u>wherein</u> it is adapted, when it receives an item of information on the establishment of the connection (251) and when it is situated on the path associated with the connection currently being established, to confirm the establishment of said connection.

178.   (Twice Amended) Communication device according to Claim 175, [characterised in that] <u>wherein</u> it is adapted, when it receives an item of information on the establishment of the connection (253) and when it is not situated on the path associated with the connection currently being established, to store in memory an item of information representing said connection.

179.   (Twice Amended) Communication device according to Claim 175,

[characterised in that] <u>wherein</u> it is adapted, when it is a communication device on a path

associated with a connection currently being established (802 to 804), to verify the possibility of

establishing said connection (1404), on reception of the request to establish a connection (251).

180.   (Amended) Communication device according to Claim 179,

[characterised in that] <u>wherein</u>, after having verified the possibility of establishing the connection

(1404), said communication device (802 to 804) is adapted to reserve the resources available to it

and which are necessary for said connection.

181.   (Amended) Communication device according to Claim 179,

[characterised in that] <u>wherein</u> it is adapted, when the possibility of establishing the connection is

not verified, to cause the transmission means to transmit, to the source communication device

(801), an item of information representing the impossibility of setting up the connection by said

intermediate communication device.

182.   - (Twice Amended) Communication device according to Claim 175,

[characterised in that] <u>wherein</u>, when the establishment of said connection is possible, it is

adapted to cause the transmission means to transmit, to the source communication device (801),

the information representing a connection acceptance (252), solely when it is a destination

communication device (802).

183.   (Amended) Communication device according to Claim 182,

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[characterised in that] wherein, in order to cause said item of information representing a

connection acceptance (252) to be transmitted, the destination communication device (802) is

adapted to choose a path independently of a path associated with the connection currently being

established.

184.   (Twice Amended) Communication device according to Claim 175,

[characterised in that it has] further comprising a memory (204A) adapted to store a load table

containing information representing loads on links in the network incorporated in a path

associated with a connection and in that it is adapted to update said load table.

185.   (Amended) Communication device according to Claim 184,

[characterised in that] wherein it is adapted, when it is an intermediate (803, 804) or destination

(802) communication device, to update the load table on reception of the request to establish a

connection (251).

186.   (Amended) Communication device according to Claim 185,

[characterised in that] wherein it is adapted, when it is situated outside the path associated with

the connection currently being established to update the load table on reception of the

information representing the establishment of a connection (253).

187.   (Twice Amended) Communication device according to Claim 175,

[characterised in that] wherein it is adapted to cause the transmission means to broadcast, to all

the communication devices in the network (802 to 809), an item of information representing the

establishment of the connection (253), causing this information to follow a spanning tree for the

network where at least half the leaves are intermediate communication devices or the destination

-communication device, on the path associated with the connection.

Claim 188 has been canceled.

189.   (Twice Amended) Communication device according to Claim 175,

[characterised in that] wherein it is adapted so that the request to establish a connection (251),

sent by the source communication device (801), includes an item of information representing the

path associated with the connection currently being established.

Claims 191-198 have been canceled.

199.   (Twice Amended) An information storage means which can be read by

a computer or a microprocessor storing instructions of a computer program, [characterised in]

that [it] allows the implementation of a communication method according to Claim 162.

200.   (Twice Amended) An information storage means which is removable,

partially or totally, and which can be read by a computer or a microprocessor storing instructions

of a computer program, [characterised in that] wherein it allows the implementation of a

communication method according to Claim 162.

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